

IN THE CLAIMS

Claim amendments. Please amend claims 1-2, 5, 7-8, and 10, and withdraw claims 12-18, as follows:

1. **(CURRENTLY AMENDED)** A self-assembled lipid bilayer material comprising a plurality of lipid bilayer molecules in a stacked columnar structure with self-limiting radial dimension mediated by chemical recognition events.
2. **(CURRENTLY AMENDED)** The self-assembled lipid bilayer material of Claim 1 wherein the each lipid bilayer molecules in a said stacked columnar structure have has a diameters in the range between approximately 600 Angstroms and approximately 900 Angstroms.
3. **(ORIGINAL)** The self-assembled lipid bilayer material of Claim 1 wherein the columnar structure is greater than approximately 300 Angstroms in length.
4. **(ORIGINAL)** The self-assembled lipid bilayer material of Claim 1 wherein the material is stable in aqueous solutions.
5. **(CURRENTLY AMENDED)** The self-assembled lipid bilayer material of Claim 1 wherein a ligand is situated intercalated between said lipid bilayer molecules, said ligand promoting adhesion between said lipid bilayer molecules.
6. **(ORIGINAL)** The self-assembled lipid bilayer material of Claim 5 wherein said ligand has at least two binding sites accessible from opposite sides of the ligand.
7. **(CURRENTLY AMENDED)** The self-assembled lipid bilayer material of Claim 4 5 wherein said ligand is a cation.
8. **(CURRENTLY AMENDED)** The self-assembled lipid bilayer material of Claim 4 5 wherein said ligand is a copper cation.
9. **(ORIGINAL)** The self-assembled lipid bilayer material of Claim 1 wherein said lipid bilayer molecules are functionalized with a receptor molecule.
10. **(CURRENTLY AMENDED)** The self-assembled lipid bilayer material of Claim 4 9 wherein said receptor molecule is iminodiacetic acid.

BEST AVAILABLE COPY

11. (ORIGINAL) The self-assembled lipid bilayer material of Claim 1 wherein molecules selected from proteins, polymers and metal oxides are intercalated between said lipid bilayer molecules.
12. (Withdrawn) A method for making a lipid bilayer material, comprising the steps of:
functionalizing lipid bilayers with a receptor lipid;
preparing a lipid bilayer suspension of the functionalized lipid molecules mixed in a matrix lipid; and
adding a ligand specific for said receptor lipid to form a lipid bilayer material.
13. (Withdrawn) The method of Claim 12, wherein said receptor lipid has a headgroup functionality that binds to said ligand.
14. (Withdrawn) The method of Claim 12, wherein said receptor lipid has from 1 to 4 hydrophobic tails.
15. (Withdrawn) The method of Claim 12, wherein said receptor lipid self-assembles to form lamellar structures in an aqueous solution.
16. (Withdrawn) The method of Claim 13, wherein said ligand has a plurality of binding sites.
17. (Withdrawn) The method of Claim 12, wherein said lipid bilayer has a geometry selected from a closed spherical form and a flat disc.
18. (Withdrawn) A method of preparing a lipid bilayer material, comprising:
dissolving distearylphosphatidylcholine in a solvent to yield a first solution;
dissolving 1-octadecyl-2-(9-(1-pyrene)nonyl)-rac-glycero-3-(8-(3,6-dioxy)octyl-1-amino-N,N-diacetic acid) in a solvent to yield a second solution;
mixing said first solution with said second solution;
removing solvent to form a homogenous lipid film;
adding a solution of morpholinepropanesulfonic acid to yield a third solution;
vortexing said third solution to form a suspension solution;
separating said suspension solution to yield a supernatant component; and
adding a solution of CuCl₂ in a NaCl aqueous solution, wherein the resultant solution self-assembles to form a lipid bilayer material with a columnar structure.

Dec-02-04 10:47am From-

T-326 P.006/006 F-223
SU6/18/595544

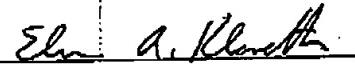
Certificate of Transmission

I certify that this paper is being transmitted by facsimile on this date to the United States Patent and Trademark Office as identified below:

Location: Group Art Unit 1775

Fax No: 703-872-9306

Date: Dec 2, 2004



Elmer A. Klavetter

**This Page is Inserted by IFW Indexing and Scanning
Operations and is not part of the Official Record**

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- BLACK BORDERS**
- IMAGE CUT OFF AT TOP, BOTTOM OR SIDES**
- FADED TEXT OR DRAWING**
- BLURRED OR ILLEGIBLE TEXT OR DRAWING**
- SKEWED/SLANTED IMAGES**
- COLOR OR BLACK AND WHITE PHOTOGRAPHS**
- GRAY SCALE DOCUMENTS**
- LINES OR MARKS ON ORIGINAL DOCUMENT**
- REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY**
- OTHER: _____**

IMAGES ARE BEST AVAILABLE COPY.

As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.